

# Investigation

# 1

## Making Comparisons

**S**urveys may report people's preferences in food, cars, or political candidates. Often, the favorites are easy to recognize. Explaining how much more popular one choice is than another can be more difficult. In this investigation, you will explore strategies for comparing numbers in accurate and useful ways. As you work on the problems, notice how the different ways of making comparisons send different messages about the numbers being compared.

### 1.1 Ads That Sell

**A**n ad for the soft drink Bolda Cola starts like this:



To complete the ad, the Bolda Cola company plans to report the results of taste tests. A copywriter for the ad department has proposed four possible conclusions.

1. In a taste test, people who preferred Bolda Cola outnumbered those who preferred Cola Nola by a ratio of 17,139 to 11,426.
2. In a taste test, 5,713 more people preferred Bolda Cola.
3. In a taste test, 60% of the people preferred Bolda Cola.
4. In a taste test, people who preferred Bolda Cola outnumbered those who preferred Cola Nola by a ratio of 3 to 2.

### Problem 1.1 Exploring Ratios and Rates

- A. Describe what you think each statement above means.
- B. Which of the proposed statements do you think would be most effective in advertising Bolda Cola? Why?
- C. Is it possible that all four statements are based on the same survey data? Explain your reasoning.
- D. In what other ways can you express the claims in the four proposed advertising statements? Explain.
- E. If you were to survey 1,000 cola drinkers, what numbers of Bolda Cola and Cola Nola drinkers would you expect? Explain.

**ACE** Homework starts on page 10.



## 1.2 Targeting an Audience

Some middle and high school students earn money by delivering papers, mowing lawns, or baby-sitting. Students with money to spend are a target audience for some radio and television ads. Companies gather information about how much students watch television or listen to the radio. This information influences how they spend their advertising dollars.